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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,796	03/11/2004	Peter Wasserscheid	VKSW-1	5636
24039	7590	06/14/2005	EXAMINER	
INNOVAR, LLC P O BOX 250647 PLANO, TX 75025			NWAONICHA, CHUKWUMA O	
			ART UNIT	PAPER NUMBER
			1621	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/798,796	Applicant(s) WASSERSCHIED ET AL.	
	Examiner Chukwuma O. Nwaonicha	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 14, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 7-13, 16 and 18-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1621

DETAILED ACTION

Current Status

Claims 1-21 are pending in the application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1-6, 14, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al., {Improvement of the Phase-Transfer Catalysis Method for Synthesis of Glycidyl Ether, Journal of the American Oil Chemists' Society (2000), 78 (4), 423-429}.

Art Unit: 1621

Applicants claim a method for using a sulfonated ionic liquid (formula 1) as a phase transfer catalyst;



formula 1

wherein all the variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Kang et al. teach a sulfonated ionic liquid as phase-transfer catalysis; wherein R' is methyl group. See abstract.

Ascertainment of the difference between the prior art and the claims

(M.P.E.P. §2141.02)

Kang et al. method for using a sulfonated ionic liquid as a phase transfer catalyst differs from the instantly claimed method in that applicants claim a method wherein R' is C₃-C₃₆ while Kang et al. teach a method of using compound of general formula 1 as a phase transfer catalyst wherein R' is methyl group. Another difference between applicants' claimed method of using an ionic salt and that of Kang et al. is that applicants claim a method wherein the compound of general formula 1 has a melting point of less than 100°C and the compound is hydrolytically stable in neutral aqueous solution (pH = 7) up to 80°C while Kang et al. is silent about these properties.

Finding of prima facie obviousness—rational and motivation (M.P.E.P. §2142-2143)

The instant claimed method of using compound of general formula 1 as a phase transfer catalyst would therefore have been suggested to one of ordinary

Art Unit: 1621

skill because one wishing to obtain sulfonated ionic liquid as a phase transfer catalyst is taught to select an ionic liquid wherein R' is an alkyl group.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the R' group to arrive at the instantly claimed method of using a compound of general formula 1 as a phase transfer catalyst. Said person would have been motivated to practice the teaching of the reference cited because it demonstrates that sulfonated ionic liquid wherein R is alkyl group can be used as a phase transfer catalyst. The Examiner notes sulfonated anion with C₁ and C₃ carbon atoms are structurally similar compounds. Therefore, sulfonated ionic liquid with C₁ and C₃ carbon atoms are expected to show similar catalytic activity. Additionally, there is nothing on record that clearly indicate that the compound of Kang et al. does not have a melting point of less than 100°C and that it is not hydrolytically stable in neutral aqueous solution (pH = 7) up to 80°C. The instant claimed invention would therefore have been obvious to one of ordinary skill in the art.

Allowable Subject Matter

Claims 7-13, 16 and 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The


Art Unit: 1621

examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chukwuma O. Nwaonicha, Ph.D.
Patent Examiner
Art Unit: 1621


ACTING FOR
Johann R. Richter, Ph.D., Esq.
Supervisory Patent Examiner,

Art Unit: 1621

Technology Center 1600